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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/523,392

02/03/2005

Akira Akasaka

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12/29/2008

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.  
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ALEXANDRIA, VA 22314

EXAMINER

ELVE, MARIA ALEXANDRA

ART UNIT

PAPER NUMBER

3742

NOTIFICATION DATE

DELIVERY MODE

12/29/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/523,392	<b>Applicant(s)</b> AKASAKA ET AL.	
	<b>Examiner</b> M. Alexandra Elve	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-7 and 9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-7 and 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neylan et al. (USPN 5,948,291) in view of Kurosawa et al. (USPN 6,373,026).

Neylan et al. discloses a laser beam distribution apparatus for directing laser energy upon a workpiece (125). There are multiple reflectors (111) which may reflect or transmit, depending on the positioning of the synchronous motor (135). The laser beam is pulsed. The controller (137) with accompanying software yields desired power and time duration. In addition controlled pulse information is sent to the stepper motors (135). If multiple reflections are made there may or may not be an equal distribution of laser power. Through software manipulation the laser beam distribution apparatus is programmable for any combination or permutation of beam distribution with either equal power or different power, at the same time as being switched from reflector member to reflector member in any order. Multiple possibilities for splitting and time switching the laser beam output. The synchronized motor movement is related to time duration and level transmissivity for the reflectors.

Although Neylan et al. indicates a relationship between time duration and movement, the pulse involvement is not specifically taught.

Kurosawa et al. discloses laser beam machining using a pulsed laser. The scanner drive/laser trigger apparatus outputs the trigger of the laser oscillation for the laser oscillator at a predetermined pulse frequency and drive commands for the two beam scanner apparatus. It is possible to position a spot of the laser beam at high speed at an optional drilling position on the printed board having many drilling positions in synchronization with a pulse frequency of the laser beam radiated from the laser oscillator. In addition a reflection mirror disposed in the optical axis of the laser beam is taught.

It would have been obvious to one of ordinary skill in the art at the time of the invention to synchronize the pulses with the laser beam machining because it ensures optimal of the laser beam at all times.

Claims 5-6 & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neylan et al. and Kurosawa et al., as stated above and further in view of De Steur et al. (USPN 6,649,864).

Neylan et al. and Kurosawa et al. do not teach the use of a mask.

De Steur et al. disclose a mask for use in laser drilling. The perforated mask ensures a uniform energy distribution.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use uniform energy distribution using a mask as taught by De Steur et al. in the Neylan et al. apparatus because it ensures quality drilled holes.

### ***Response to Arguments***

Applicant's arguments filed 8/19/08 have been fully considered but they are not persuasive.

Applicant argues that timing is not taught by Neylan et al. The examiner respectfully disagrees because Neylan et al. teaches the following:

The distribution configuration shown in FIG. 6a is a variation on the configuration shown in FIG. 5a. In this configuration full power is non-sequentially distributed from the reflector members for a sub-period of time needed to complete an individual work piece, thus non-sequentially switching full power output from reflector member to reflector member. The **timing** and order of the distribution is dependent on the work desired and is fully programmable by the user. For each time sub-period,  $t$ , the movable reflector members RM1-RM3 are positioned at either fully transmissive or fully reflective portions to give the desired beam distribution. FIG. 6b shows the power/time diagram for this configuration. (col. 5, lines 53-65)

Additionally, it is the position of the examiner that the Neylan et al. apparatus is fully capable of altering timing and the associated movement of the reflector(s).

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 7:30-4:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu B. Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

December 21, 2008.

/M. Alexandra Elve/  
Primary Examiner, Art Unit 3742